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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,384	05/02/2001	Jun Someya	1190-0496P	4056

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

RAHMJOO, MANUCHER

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/846,384

Applicant(s)

SOMEYA ET AL.

Examiner

Mike Rahmjoo

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-11 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-11 and 21-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 4 - 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US Patent 5,987,185) in view of Le (US Patent 6,608,942).

As per claims 1 and 8 Suzuki teaches a detection unit (characteristic extraction means) for detecting bright parts of the image, detected by the detection unit, that are adjacent to dark parts of the image, from the image data see for example column 2 lines 45- 67 and column 7 lines 5- 10 (white and black dots); a smoothing unit (see for example the filter means for filtering of column 2 line 59) coupled to the detection unit, for smoothing the bright parts of the image that are adjacent to the dark parts of the image by filtering the image data, leaving the dark parts of the image unsmoothed see for example column 7 lines 64- 67 through column 8 lines 1-2 and column 11 lines 28- 39 and figure 25.

However, Suzuki does not teach a display unit coupled to the smoothing unit, for displaying the image data, including the smoothed bright parts of the image and the unsmoothed dark parts of the image.

Le teaches a display unit coupled to the smoothing unit, for displaying the image data, including the smoothed bright parts of the image and the unsmoothed dark parts of the image, unsampling and a pixel map representation of a particular color for each pixel see for example column 6 lines 42- 67 and figure 1.

It would have been made obvious to one of ordinary art at the time the invention was made to incorporate the teachings of Le into Suzuki to reduce or eliminate any jagged edges and resolve data from a lower resolution to a higher resolution and represent the Image on an FLCD see for example column 6 lines 42- 50.

As per claim 2 Le teaches the image data include data for different primary colors, and the detection unit detects said bright parts separately for each primary color see for example column 11 lines 3- 15.

As per claims 4 and 9 Le teaches the detection unit also detects edges in the image from the image data, and controls the smoothing unit so that only bright parts of the image that are adjacent to the detected edges are smoothed see for example column 29 lines 15- 18 and column 8 lines 14- 24.

As per claims 5 and 10 Suzuki teaches the detection unit also detects dark parts of the image (black) having at most a predetermined width, and controls the smoothing unit so that only bright parts of the image (white) that are adjacent to the detected dark parts having at most the predetermined width (through the calibrated positions of black

and white) are smoothed see for example figures 6-11 and 23- 29.

As per claims 6 and 11 Le teaches the image data include data for different primary colors, and the smoothing unit uses different filtering characteristics for the different primary colors see for example column 11 lines 50- 65 and figures 6- 7.

As per claim 7 Suzuki teaches the image data include a luminance signal, and the smoothing unit filters the luminance signal see for example column 12 lines 52- 62 and figure 29.

Claims 21- 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US Patent 5,987,185) in view of Kawamura (US Patent 5,251,267).

As per claims 21 and 24 Suzuki teaches detection and smoothing units.

However, Suzuki does not teach the smoothing unit includes at least two filters.

Kawamura teaches the smoothing unit includes at least two filters (see for example the two filters of column 5 lines 38- 40), the image being selectively filtered through one of the at least two filters determinative upon a control signal produced by the detection unit for selection of light and dark parts see for example figures 1- 4.

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Kawamura into Suzuki to provide different filtering and therefore enhance the quality of output image and at the same time increase the versatility and reliability of the display panel with increased brightness.

As per claims 22 and 25 Kawamura teaches the first filter is selected if the detection unit detects a bright part of the image adjacent to a dark part of the image see

for example column 2 lines 65- 67 and column 3 lines 1- 9.

As per claim 23 and 26 Kawamura teaches the second filter is selected if the detection unit does not detect a bright part of the image adjacent to a dark part of the image see for example column 4 lines 50- 67 and figures 4a- d through the process of arithmetic operations that lead to differential filter output.

### ***Response to Arguments***

Applicant's arguments filed 01/09/2004 have been fully considered but they are not persuasive.

As per applicant's remarks on page 13 line 9, applicant argues "smoothing out jagged edges but to leave the dark parts unfiltered so that they don't become faint".

Applicant further argues on page 13 line 13 that the prior art made of the record does not "address any concerns regarding larger sizes of bright objects or make any special allowance for the tendency of fine dark patterns to become too faint to be seen".

The smoothing of the "jagged edges" as well as "larger sizes of bright objects" and "faintness" are not claimed as per language of the submitted claims.

The examiner suggests amending the claim language as to incorporate said limitations.

Applicant argues on page 13 lines 21- 22 that "the criteria for leaving an area unfiltered is not whether there are large density changes in the area, but whether the area is a bright area adjacent to a dark area".

As per teachings of Suzuki in figures 13- 14 “the peripheral areas of the chart formed are of slender radial lines 61 (dark), noise 62 and 63 (bright)”. These **adjacent** dark and bright areas are processed with a filtering device which **completely eliminate the noise**.

As per column 7 lines 64- 67 Suzuki also teaches the multiple value picture image data has 64 chromatic grades for which the number of chromatic grades is **not limited** to this number (no density limitation). Also, any filters can be used as long as they perform **low pass filtering** which is the bright parts or the noise section of the image data.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6,044,178.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

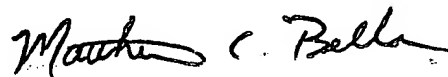
### **Inquiry**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is (703) 305-5658. The examiner can normally be reached on 6:30- 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (703) 308- 6829. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872- 9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Mike Rahmjoo



February 17, 2004

**MATTHEW C. BELLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600**